

WATER CONSERVATION PROGRAM

PURSUANT TO RSA 485:61

FOR THE

**WINNISQUAM VILLAGE CONDOMINIUM
TILTON, NH**

COMMUNITY WATER SYSTEM

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WINNISQUAM VILLAGE WATER SYSTEM CONSERVATION PROGRAM

INTRODUCTION

The Winnisquam Village Condominium Water System is a small community water system which is not yet developed. When complete it will be owned by the Winnisquam Village Homeowner's Association to serve the domestic water needs of 86 townhomes and a population of approximately 200 individuals. This conservation program is intended to comply with NHRSA 485:61 and Env-Ws 390. To be effective, the Conservation Program will require continued monitoring on part of the water system operator.

Efficient water use can have major environmental, public health and economic benefits by helping to improve water quality, maintain aquatic ecosystems, and protect drinking water resources. As the state faces increasing risks to ecosystems and their biological integrity, the inextricable link between water quality and quantity becomes more important. Water efficiency is one way of addressing water quality and water quantity goals. The efficient use of water can prevent pollution by reducing wastewater flows and result in the use of less energy.

The members of the Homeowner's Association and society at large benefit from conservation. Conservation benefits society by preserving environmental resources and the Homeowner's Association by lowering energy costs, capital costs and maintenance cost of the water system.

The goals of the Winnisquam Village Water Conservation plan are:

- Reducing the need for capital improvements to the water system.
- Extending the life of the water system.
- Lowering variable operating costs.
- Avoiding new source development costs.
- Improving drought or emergency preparedness.
- Educating Association members about the value of water.
- Improving reliability and margins of safe and dependable yields.
- Protecting and preserving environmental resources.

The primary method of obtaining these goals is a program that incorporates the following:

- A comprehensive metering program.
- A water usage audit program
- A water usage pricing program
- An educational program
- A water efficient plumbing fixtures program
- A water conserving landscaping program.

DESCRIPTION OF THE WATER SYSTEM

The Winnisquam Village Condominium Association Water System consists of two deep bedrock wells which collectively produce approximately 40 gallons per minute. In addition to the two wells, there is a 30,000 gallon atmospheric water tank and a pressure booster tank with associated pumps. The system is designed to provide 25,800 gallons per day at 60 psi and actual use is expected to be substantially less than the design capacity.

CONSERVATION MEASURES

Metering

Metering is a very fundamental tool of water system management and conservation and is the primary method of monitoring water usage and determining the integrity of the Water System.

Source metering. The Water System will have a 6" meter at the source discharge. This meter will record all usage from the system and be installed in accordance with the procedures and protocols of the American Water Works Association.

Service-connection metering. Service-connection metering will be provided at all water service connections. Domestic water for each unit will be via a 1.25" service connection with a 1.25" meter. All service connections will be metered in accordance with the procedures and protocols of the American Water Works Association. By measuring the water utilized at all service connections and comparing it to the source meter it will be possible to determine any unaccounted water.

Fixed-interval meter reading. A program of fixed-interval meter reading will be implemented to determine the amount of system water being used. Source meter and service connection meters will be read at the same relative time in order to facilitate accurate comparisons and analysis. Once the entire system is complete and all connections are made meter readings will occur at the source meter every 30 days and at each service connection every 90 days.

Meter accuracy. Since water meters can be damaged and deteriorate with age, it is possible to have inaccurate readings which will give misleading information regarding water usage, make leak detection difficult. Since all meters are new it is anticipated that the accuracy of the meters will not need to be verified for ten years unless there is a discrepancy between the summation of the Service-connection meters and the Source Meter. If there are discrepancies the meters shall be recalibrated as needed to ensure accurate water accounting.

Water-Use Audits

Water-use audits will provide the Water System with information about how water is used and how usage might be reduced through specific conservation strategies. This accounting exercise will provide a basis for a strategy to control losses over time and will be in compliance with the "Manual of Water Supply Practices, Water audit and Leak Detection" document identification number AWWAM36, American Water Works Association, 1999.

Periodic-interval system audits. Once the system is complete and all connections are made the water system operator will estimate the volume and percentage of unaccounted water annually using protocols and procedures as described in the "Manual of Water Supply Practices, Water Audits and Leak detection" document identification number AWWAM36, American Water Works Association, 1999. If the amount of unaccounted water exceeds 15% the water operator will prepare and submit a response plan to the Department of Environmental services within 60 days of the audit. The water system operator will make any necessary repairs to leaks within the Water System within 60 days of detection.

Periodic-interval townhome audits. Once the Water System is complete and all connections are made, the water system operator will annually compare the consumption of each connection to determine any anomalies. Should there be an anomaly within a Townhome unit consumption, the Association will request that the homeowner perform an audit using the form which is attached as Exhibit 1. The audit of individual homes will determine if there are any circumstances within the Townhome such as leaky faucets or toilets to cause the anomaly. The Association would request the homeowner make any required repairs noted from the audit.

Other Leak detection. The water operator will institute a comprehensive leak detection program on a quarterly basis to determine that components prior to the Source water meter are not leaking or malfunctioning. The water operator will repair any leak within 60 days of detection.

Water Pricing

The cost of operating the water system will be included as an association expense and will be paid from the Association dues. It is anticipated that the Winnisquam Village Condominium Water System will likely be conveyed to a private or municipal water system once the system is complete and all connections are made. It is expected at that time that water will be billed by usage.

The pricing strategy would be designed to encourage water conservation with low base rates and increasing costs for higher volumes. The pricing program will be used as a conservation incentive and will serve as a reminder to the homeowner of the costs associated with water.

Information and Education

Information and education are critical to the success of any conservation program. Information and education measures can directly produce water savings, and result in a change in water-use habits. Homeowner's that are informed and involved are more likely to support the Water System's conservation programs.

The Winnisquam Village Homeowner's Association water system operator will prepare and provide information pamphlets to all homeowner's connected to the water system. The information pamphlets will explain to the homeowner's the costs involved in supplying drinking water and demonstrate how water conservation practices will result in long term savings. The educational materials will be in compliance with Env-WS 390.

Low Water Usage Plumbing Fixtures

The Winnisquam Village Condominium Water System will serve 86 new townhomes to be constructed over the next three years. In order to conserve water shower heads and toilets in all homes will be low water usage fixtures. Homeowners will be encouraged to utilize similar fixtures when it is necessary to replace the fixtures.

Landscape Efficiency

Outdoor water usage will increase maximum daily demand for the overall water system. Reducing outdoor usage is an effective conservation strategy and water use will be reduced through efficiency-oriented landscaping principles.

Landscape design efficiency. The developer will incorporate water conserving principles into the planning, development and management of the landscaping associated with the Winnisquam Village Condominium.

Over 86% of the condominium area will be left natural. The landscaped areas have been minimized and are estimated to represent 7.5% of the condominium area. The landscaped areas incorporate a water efficient approach to landscaping that encompasses seven essential principles:

- Planning and design to be water saving
- Limited turf areas
- Efficient irrigation
- Soil improvement
- Mulching
- Use of lower water demand indigenous plants
- Appropriate maintenance

Irrigation management. Turf irrigation is not anticipated, but should turf areas be irrigated with an irrigation system, the irrigation system will utilize metering, timing, and water-sensing devices. If the Association determines that it will have a turf irrigation program and once the Water System is complete and all connections have been connected will annually in the spring:

- Measure the flow rate of sprinklers
- Check for leaks in the sprinkler system
- Check the position of sprinklers
- Schedule the watering schedule based on specific areas:
 - ◆ Best time of day for watering
 - ◆ Frequency of watering
 - ◆ Length of time for watering

Water Use Standards and Regulations

The Association has the authority to pass rules affecting the use of common areas within the Winnisquam Village Condominium Association legal documents. The Board of Directors of the Association shall adopt rules to manage water use during droughts or other water-supply emergencies. These could include:

- Restrictions on lawn watering.
- Restrictions on car washing
- Other restrictions as may be appropriate

CONCLUSION

The Winnisquam Village Condominium Association Water System is a small system that has been designed initially to utilize water efficiently. Through monitoring of this Conservation Plan it is anticipated that the Water System will operate at a high efficiency rate. The primary responsibility of implementing and monitoring this Conservation Plan will be with the NH Certified Water Operator hired initially by the developer and later by the homeowner's association. The ultimate responsibility for monitoring compliance with this Conservation Plan will rest with the Homeowner's Association Board of Director's.

EXHIBIT 1

Checklist for a Residential Water Audit

Service Meter	<u>OK</u>
Calibration/flow test	
Leak test	
Report findings to maintenance personnel	
Kitchen	
Check faucet flow rate	
Offer to install aerator or flow restrictor	
Check for drips and leaks	
Bath	
Shower	
Check showerhead flow rate	
Offer to install low-flow showerhead or flow restrictor	
Check for drips and leaks	
Sinks	
Check faucet flow rate	
Offer to install aerator or flow restrictor	
Check for drips and leaks	
Toilets	
Check for leaks (dye test)	
Clean or replace flapper	
Check the adjustment of the float arm	